

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the present application:

I-10. (Canceled)

11. (Currently amended) A method comprising:

running a plurality of tasks in a multiprocessor system that includes a plurality of processors, each processor having an identity;

scheduling the plurality of tasks using a plurality of scheduling domains by scheduling tasks on a processor independent of the identity of the processor, wherein none of the plurality of scheduling domains is bound to any one processor of the plurality of processors;

implicitly synchronizing the tasks with regard to one or more resources shared by the tasks in said system by associating said tasks with the scheduling domains, wherein each of the one or more resources is assigned to one of the scheduling domains and is not subject to domain migration, wherein implicitly synchronizing the tasks comprises

prohibiting tasks that are each associated with a same scheduling domain from running concurrently, and

allowing tasks that are each associated with different scheduling domains to run concurrently; and

changing association of a task of the plurality of tasks from a first scheduling domain to a second scheduling domain, if the task requires ~~a resource~~ one of the shared resources assigned to the second scheduling domain.

12. (Currently amended) A system comprising:

a plurality of processors, each processor having an identity;

a memory coupled to each of the plurality of processors, the memory storing data defining a set of tasks, each task of the set of tasks being runnable on more than one of said processors, each said task being associated with one of a plurality of scheduling domains, each of the plurality of scheduling domains controlling one or more shared resources, wherein each of the shared resources is not subject to domain migration; and

a scheduler to schedule the set of tasks using a plurality of scheduling domains by scheduling tasks on a processor independent of the identity of the processor, wherein none of the plurality of scheduling domains is bound to any one processor of the plurality of processors, where the scheduler prohibits tasks that are each associated with a same scheduling domain from running concurrently but allows tasks that are each associated with a different one of the plurality of scheduling domains to run concurrently, and wherein the scheduler changes association of a task of the set of tasks from a first scheduling domain to a second scheduling domain if the task requires ~~a shared resource~~ one of the shared resources controlled by the second scheduling domain.

13. (Canceled)

14. (Previously presented) A system as in claim 12, wherein at least one of the set of tasks is associated with more than one scheduling domain of the plurality of scheduling domains.

15. (Canceled)

16. (Original) A system as in claim 12, wherein said scheduler includes a plurality of runnable queues, one per scheduling domain.

17-22. (Canceled)

23. (Currently amended) A process comprising:

scheduling a plurality of tasks in a multiprocessor system that includes a plurality of processors, each processor having an identity, by scheduling tasks on a processor independent of the identity of the processor, wherein none of the plurality of scheduling domains is bound to any one processor of the plurality of processors;

performing implicit synchronization of the plurality of tasks, said implicit synchronization dividing said tasks into the scheduling domains, at least one of the scheduling domains being associated with at least two tasks of the plurality of tasks and a resource shared by the at least two tasks, wherein the shared resource is not subject to domain migration, and wherein tasks within a same scheduling domain are prohibited from running concurrently even if run on different processors and tasks that are each from a different scheduling domain are allowed to run concurrently; and

moving a task of the plurality of tasks from a first scheduling domain to a second scheduling domain, if the task requires ~~a resource~~ one of the shared resources controlled by the second scheduling domain.

24-29. (Canceled).

30. (Currently amended) A method of scheduling a plurality of processes in a multiprocessor system, the method comprising:

associating the plurality of processes with a plurality of scheduling domains wherein none of the plurality of scheduling domains is bound to any one processor in the system, and wherein each of the processes is executed by a processor independent of an identity of the processor;

implicitly synchronizing the plurality of processes with regard to one or more shared resources by prohibiting concurrently executing processes that are each associated with a same scheduling domain but allowing concurrently executing processes that are each associated with a different one of the plurality of scheduling domains, wherein each of the shared resources is assigned to one of the scheduling domains and is not subject to domain migration; and

changing association of a first process of the plurality of processes from a first scheduling domain to a second scheduling domain, if the first process requires ~~a resource~~ one of the shared resources associated with the second scheduling domain.

31. (Previously presented) The method of claim 30 further comprising allowing concurrently executing processes that are not associated with any one of the plurality of scheduling domains.

32. (Previously presented) The method of claim 30, wherein at least one of the plurality of processes is associated with more than one of the plurality of scheduling domains.

33. (Previously presented) The method of claim 30, wherein each of the plurality of scheduling domains is associated with a different one of a plurality of runnable queues.

34. (Currently amended) A method implemented in a multiprocessor system, the method comprising:

executing a software program that defines a plurality of tasks and assigns each of the plurality of tasks to one of a plurality of scheduling domains, wherein none of the plurality of scheduling domains is bound to any one processor in the system;

running a plurality of processes, each of the plurality of processes performing a different one of the plurality of tasks, wherein each of the plurality of processes is run by a processor independent of an identity of the processor;

prohibiting concurrently executing processes performing tasks that are each assigned to a same scheduling domain;

allowing concurrently executing processes performing tasks that are each assigned to a different one of the plurality of scheduling domains; and

allowing changing assignment of at least one task from a first scheduling domain to a second scheduling domain during executing the software program, if said at least one task requires a resource one of the shared resources assigned to the second scheduling domain, wherein the shared resource is not subject to domain migration.

35. (Currently amended) A processing system comprising:

a plurality of processors, each processor having an identity;

a memory coupled to each of the plurality of processors, the memory storing instructions which, when executed by one or more of the plurality of processors, cause the one or more of the plurality of processors to perform a method comprising:

executing a software program associating a plurality of tasks with a plurality of scheduling domains and assigning a plurality of resources to the plurality of scheduling domains, wherein none of the plurality of scheduling domains is bound to any one processor of the plurality of processors, and wherein each task of the plurality of tasks is scheduled on one of the processors independent of the identity of the processor;

prohibiting concurrently executing processes to perform tasks that are each associated with a same scheduling domain but allowing concurrently executing processes to perform tasks that are each associated with a different one of the plurality of scheduling domains; and

changing association of a first task of the plurality of tasks from a first scheduling domain to a second scheduling domain, if a process performing the first task requires ~~a resource~~ one of the shared resources assigned to the second scheduling domain, wherein the shared resource is not subject to domain migration.

36. (Currently amended) A computer-readable storage medium storing instructions therein which, when executed by one or more processors of a processing system, cause the one or more processors to perform a method comprising:

executing a software program that defines a plurality of tasks and assigns each of the plurality of tasks to one of a plurality of scheduling domains, wherein none of the plurality of scheduling domains is bound to any one processor in the system;

running a plurality of processes, each of the plurality of processes performing a different one of the plurality of tasks, wherein each of the processes is run on a processor independent of the identity of the processor;

prohibiting concurrently executing processes performing tasks that are each assigned to a same scheduling domain;

allowing concurrently executing processes performing tasks that are each assigned to a different one of the plurality of scheduling domains; and

allowing changing assignment of at least one task from a first scheduling domain to a second scheduling domain during executing the software program, if said at least one task requires ~~a resource~~one of the shared resources assigned to the second scheduling domain, wherein the shared resource is not subject to domain migration.

37. (Currently amended) A method, comprising:

associating a task of a plurality of tasks with a scheduling domain of a plurality of scheduling domains, wherein the plurality of tasks share one or more resources and each of the one or more resources is assigned to one of the plurality of scheduling domains;

scheduling the task, using the scheduling domain, on a processor in a multiprocessor system that includes a plurality of processors, independent of an identity of the processor;

prohibiting tasks that are each associated with a same scheduling domain from running concurrently;

allowing tasks that are each associated with different scheduling domains to run concurrently; and

changing association of the task from a first scheduling domain to a second scheduling domain, if the task requires ~~a resource~~one of the shared resources assigned to the second scheduling domain, wherein the shared resource is not subject to domain migration.